v. Langenbeck (B.)

# BONE-FORMATION

AFTER

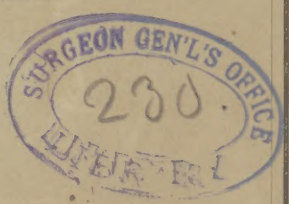
# RESECTION OF THE LOWER JAW.

BY

B. v. LANGENBECK.

*TRANSACTIONS OF THE "GERMAN SOCIETY OF SURGERY," SIXTH CONGRESS.*

BERLIN, APRIL 7, 1877.

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Other writers, and among them notably Lord Stanhope, have published works covering, in great measure, the same period which Mr. Lecky has here chosen to treat of; but the plans, objects, and the classes of facts, on which the present history especially dwells, are so very different from all preceding histories as to constitute an entirely distinct production. Next to impartiality, nothing has so distinguished Mr. Lecky as his power of massing facts, and preserving their due relation and subordination. The strict order of chronology he in some cases departs from, for, as he observes, "the history of an institution, or a tendency, can only be written by collecting into a single focus facts that are spread over many years, and such matters may be more clearly treated according to the order of subjects than according to the order of time." This is, indeed, the philosophy of history; and, instead of giving a dry narrative of events year by year, it has been Mr. Lecky's object "to disengage from the great mass of facts those which relate to the permanent forces of the nation, or which indicate some of the more enduring features of national life, and to present the growth or decline of monarchy, the aristocracy, and the democracy, of the Church and of Dissent, of the agricultural, the manufacturing, and the commercial interests; the increasing power of Parliament and of the press; the history of political ideas, of art, of manners, and of belief; the changes that have taken place in the social and economical condition of the people; the influences that have modified national character; the relations of the mother-country to its dependencies, and the causes that have accelerated or retarded the advancement of the latter."

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# BONE-FORMATION AFTER RESECTION OF THE LOWER JAW.[1]

GENTLEMEN: I am permitted to make this brief communication through the (as I may well say) exceedingly great attention which Prof. J. R. Wood, of New York, has shown, in sending this preparation here from New York by his assistant, Dr. Wiggin, in order to allow it to be demonstrated. Dr. Wiggin must return again to-morrow to New York, and, although our allotted time is very brief, nevertheless I have deemed it necessary to present this demonstration, because otherwise our distinguished American colleague would have sent us this really grand work in vain.

Prof. Wood, Surgeon to Bellevue Hospital, in New York, had the kindness to send me the photograph of this skull last fall—a skull of which the entire under jaw has been extirpated on account of phosphorus-necrosis, and of which the whole lower jaw has, in the course of a brief time, formed itself anew; and when, in my surgical lecture, I had showed and explained this photograph, *I did not believe that a correspond-*

[1] This article is a literal translation of B. v. Langenbeck's speech on the subject of Reproduction of Bone, delivered in the Aula of the University of Berlin, before the Congress of Surgeons, in April, 1877. The speech has been published in the "Transactions of the Congress," which book we have before us, and from which we have translated the entire address.

*ing preparation really existed anywhere*, he had the courtesy to send us this skull with the newly-formed lower jaw. I will quite briefly present the history of the operation, which is described in a short article by Dr. Wood in the "New York Journal of Medicine" for May, 1856, as the "Removal of the entire Lower Jaw, for Necrosis caused by Phosphoric-Acid Gas"

A girl—Cornelia S.—sixteen years of age, formerly always healthy, had worked in match-factories for two years and a half, one of which was very badly ventilated. She was occupied eight hours daily in packing matches, but enjoyed the best of health until May, 1855. At that time there took place, along with toothache, a swelling of the lower jaw, with suppuration. The patient, however, continued her work up to December, 1855.

Upon her reception into Bellevue Hospital, total necrosis of the right, and partial of the left, lower jaw existed, with profuse suppuration. The pus poured for the greater part into the cavity of the mouth, and outward through a fistula opening in the lower border of the mandibula. Notwithstanding this, her general health had remained good, and her appetite good, only chewing was very much impeded.

On the 19th of January, 1856, Dr. Wood made a resection of a part of the right lower half of the jaw, with most careful saving of the periosteum, and with preservation of the chin-portion of the lower jaw. Healing resulted without interruption, but it soon became evident that the entire remaining under jaw was diseased also, and this had likewise to be removed on the 16th of February, 28 days after the first operation. Excepting the retraction of the tongue ensuing upon the removal of the jaw, and the choking symptoms induced thereby, the good effect of the operation and the healing of the wound remained uninterrupted, and in March, 1856, the patient was able to be discharged, recovered.

The reformation of bone was *complete*, and the function of the new lower jaw left nothing further to be desired. In the photograph taken at this time, you observe the admirable contour of the lower jaw, of which the chin-portion only re-

cedes slightly. Some years later, Cornelia S. died of abscess of the brain, and so Dr. Wood acquired the possession of this skull, which stands before you, and upon which you observe the entire lower jaw, with extremely complete form, only a very little smaller than the original must have been.

Formerly, cases of phosphorus-necrosis came into the clinic here not infrequently, and scarcely a term passed in which some jaw-resections were not performed. Thanks to the better ventilation in factories since 1864, scarcely any cases have come under observation, and it appears that phosphorus-necrosis will, at no very distant time, be eliminated.

I have performed subperiosteal resection of the entire lower jaw six times—four times in consequence of phosphorus-necrosis, and twice in consequence of acute osteo-periostitis. In all these case reformation of new bones was observed, and, indeed, as in the case operated upon by Dr. Wood, with most complete restoration of the function.

When one extirpates the entire lower jaw from under the periosteum at one sitting, the chin must invariably recede. The room for the formation of the new lower jaw is restricted by muscles, namely, by the genio-glossi; the contour of the new lower jaw develops imperfectly, and the chin-portion of it retreats more or less perceptibly. In order to obviate this evil, I have, like Dr. Wood, made the operation at *two different times*, and at first cut out from the periosteum the smaller portion of the mandibula—which was, however, most diseased—leaving the chin and larger portion alone, and then, after four or six weeks, resected the remainder. But even then, as this photograph and the description given by Dr. Wood indicate, the lower jaw is always smaller, and the normal prominence of the chin is lacking.

This evil is almost completely avoided, if, as Billroth has recommended, one leave behind in position osteophytes from the necrosed bone, in immediate contact with the periosteum. This photograph shows you such a case. I cut out first the smaller part of the necrosed jaw-bone, and, after new bone could be distinctly felt—six weeks later—I cut out the greater part, with the chin-portion. The resected jaw here shows you that osteophytes were left almost completely around.

The photograph, which is taken half in profile (August Matthes's), shows you that the contour of the lower jaw is very complete, and that the chin stands out in the normal manner.

The skull sent to us by Dr. Wood settles at once the question of the durability of the newly-formed bone. It has, indeed, been repeatedly maintained, that the newly-formed bone, after subperiosteal resection, cannot be of a durable kind, but that it subsequently must be reabsorbed. At all events, this may happen, and I have myself seen it in the case of a woman suffering from phosphorus-necrosis of the lower jaw, much reduced by long suppuration, whose lower jaw, newly formed after resection, was, after a twelvemonth, almost entirely reabsorbed. Such an absorption of bone is, however, a rare occurrence in my observation, and I can testify to the unchanged persistence after years of the new bone-formation, after subperiosteal extirpation, as well in the lower jaw as in long bones (tibia, radius, os metacarpi pollicis).

Dr. Wood's patient died some years after the operation, and yet you see the new lower jaw preserved in all its parts, although a trifle smaller than was the original jaw.

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